

BRONCHIOLITIS DIAGNOSED BEFORE 2 YEARS OF AGE AND LOWER INCOME FAMILIES CAN BE AN IMPORTANT RISK FACTOR OF BRONCHIAL HYPERSENSITIVITY

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Background & Aims: The prevalence of asthma has increased in recent decades globally. The objective of our study is to identify important risk factors of bronchial hyperreactivity (BHR) in school children.

Method: We studied 522 children age 13~14 years attending schools in rural and urban areas to investigate the risk factors for BHR, defined as a provocation concentration of methacholine that causes a decrease of 20% (PC20) in forced expiratory volume within 1 second. Clinical examination, skin prick test, spirometry, and methacholine challenge were performed on all patients. We used logistic regression to investigate the risk factors for BHR.

Results: Forty-six (10.3%) positive BHR cases were identified. From the multivariable logistic analysis, as independent predictors of BHR, the odds ratio of bronchiolitis diagnosed before 2 years is 4.12 (95% CI: 1.21 ~14.04), the odds ratio of female children is 2.30 (95% CI: 1.01 ~5.28), the odds ratio of low family income is 2.21 (95% CI: 1.03 ~4.76), the odds ratio of positive skin prick test is 2.19 (95% CI: 1.05 ~4.57), and the odds ratio of residential environment is 4.14 (95% CI: 1.62 ~10.60).

Conclusions: This study shows that sensitization to allergens and bronchiolitis diagnosed before 2 years in lower income families may respectively be considered as risk factors of bronchial hypersensitivity. Avoidance of allergens and prevention of acute respiratory infection in early childhood are important to prevent BHR as a precursor of asthma.

Key Words: Children, BHR, bronchiolitis, asthma, skin prick test.